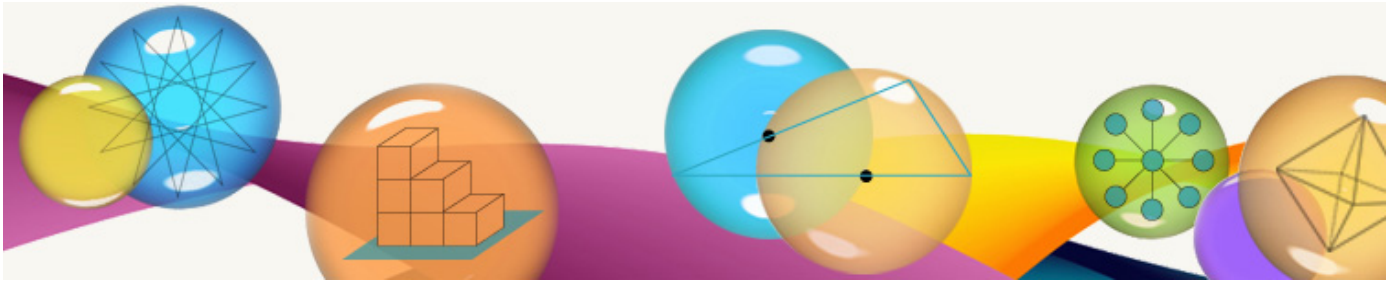# Problem of the Week

Problem D Repetition By Product (Grade 9 / 10)

A positive integer is to be placed in each box below.

Integers may be repeated, but the product of any four adjacent integers is always 120.

Determine all possible values for x.

		2			4			x			3		

Problem E Recovering Costs (Grade 11 / 12)

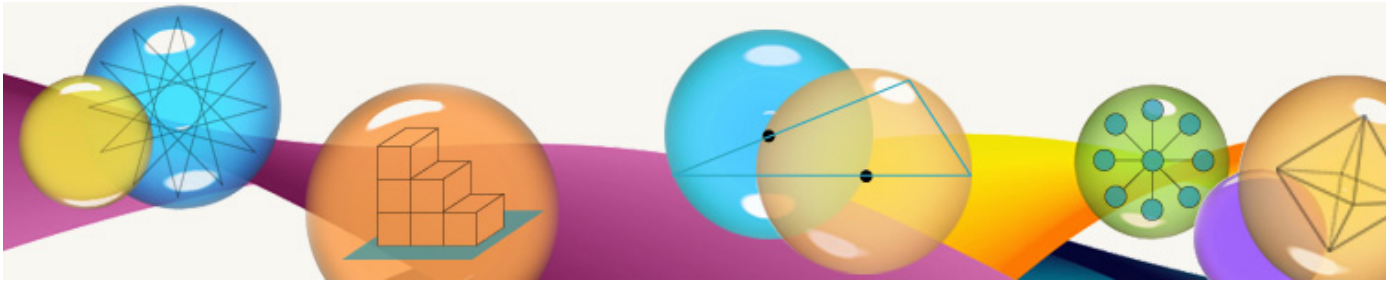In August, September and October, POTW Motors paid a constant price of \$1.25 per litre of fuel.

In September, they used $x\%$ more litres of fuel than in August, where x is some positive number. In October, they used $x\%$ less litres of fuel than in September.

The bookkeeper for POTW Motors forgot to record how much the company paid for fuel in September. However, she does know that POTW Motors paid a total of \$3125 for fuel in August and \$3080 for fuel in October.

Determine POTW Motor's total fuel cost for September.
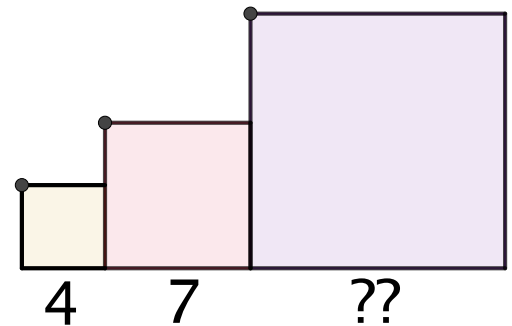
Problem of the Week

Problem D Big, Bigger, Biggest (Grade 9 / 10)

Three squares are placed beside each other as shown.

The smallest square has side length 4 units, the middle-sized square has side length 7 units, but the side length of the largest square is unknown. However, the top left corner of each of the three squares lies on a straight line.

Determine the side length of the largest square.

4   7   ??

Problem E Leave the Light On (Grade 11 / 12)

In an art gallery, a 2 m high painting, BT, is mounted on a wall with its bottom edge 1 m above the floor.

A spotlight is mounted at S, 3 m out from the wall and 4 m above the floor.

Determine $\angle TSB$, accurate to 1 decimal place.